

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A system for enabling verbal communication on behalf of a local entity with a nearby user, the system comprising:

user equipment, intended to be carried by a user, comprising a wireless communication subsystem, and a contact-data input ~~means~~ subsystem for receiving contact data;

a contact-data providing ~~means~~ arrangement located at the local entity for making available to a user near the local entity or to the user equipment carried by that user, contact data identifying a voice service associated with the entity but separately hosted;

a communications infrastructure comprising at least a wireless network for communicating with the wireless communication subsystem of the user equipment;

an audio output ~~means~~ arrangement forming part of the user equipment, or located in the locality of the local entity and connected to the communication infrastructure;

an audio input ~~means~~ arrangement forming part of the user's equipment, or located in the locality of said entity and connected to said communications infrastructure; ~~and~~

a voice service arrangement for providing said voice service, the voice service arrangement being connected to said communications infrastructure such as to enable the user's equipment to contact it over the wireless network using said contact data, the voice service arrangement being operative, in response to being contacted by the user equipment, to act as

voice proxy for the local entity by ~~providing voice input and output signals~~ exchanged over the communications infrastructure with ~~to~~ the audio input and output arrangements ~~means~~ thereby enabling a user to interact with the voice service through spoken dialog with voice input by the user through the audio input ~~means~~ arrangement and voice output to the user through the audio output ~~means~~ arrangement;

controllable functionality associated with the local entity; and

a short-range-communications arrangement comprising complimentary elements at the local entity and in the user equipment for establishing a short range wireless link between the user equipment and said controllable functionality; the user equipment being arranged to receive control data from the voice service arrangement in the course of the latter acting as a voice proxy for the local entity, and to pass on the control data via said short-range wireless link to said controllable functionality whereby to enable this functionality to be controlled by the voice service arrangement in coordination with said voice output.

2. (currently amended) A system according to claim 1, wherein the contact-data providing ~~means~~arrangement is a beacon device located at or near the local entity and operative to communicate with the contact-data input ~~means~~subsystem of the user's equipment over said short-range ~~communication~~ wireless link.

3. (currently amended) A system according to claim 1, wherein the contact-data providing ~~means~~arrangement comprise markings that are located on or adjacent the entity and represent the

contact data, the contact-data input ~~means~~subsystem of the user's equipment comprising a scanner for reading the markings.

4. (currently amended) A system according to claim 1, wherein the contact-data providing meansarrangement ~~comprises means~~ ~~for~~is arranged to presenting the contact data to the user visually or audibly, the contact-data input ~~means~~subsystem of the user's equipment comprising a user-operable input arrangement~~means~~ through which the user can input the contact data into their equipment.

5. (currently amended) A system according to claim 1, wherein in said dialog the entity is represented in first person terms through the voice service.

6. (currently amended) A system according to claim 1, wherein both the audio input and output arrangements~~means~~ form part of the user equipment, the user equipment being operative to exchange said voice input and voice output with the voice service as voice signals passed across the wireless network.

7. (currently amended) A system according to claim 1, wherein both the audio input and output arrangements~~means~~ are located in the locality of said entity apart from the user equipment, the voice service arrangement being operative to exchange said voice input and voice output with the audio input and output devices as voice signals passed across the communications infrastructure.

8. (currently amended) A system according to claim 1, wherein the audio input ~~means~~arrangement forms part of the user

equipment and the latter is arranged to pass said voice input as voice signals across the wireless network to the voice service, the audio output ~~means~~arrangement being located in the locality of said entity apart from the user equipment and the voice service arrangement being arranged to pass said voice output as voice signals to the audio output ~~means~~arrangement across the communications infrastructure.

9. (currently amended) A system according to claim 1, wherein said audio output ~~means~~arrangement comprises multiple sound output devices spaced from said local entity, and a controller~~means~~ for controlling excitation of these devices such as to produce a the sound output such that it appears to be originating from said local entitythe user to emanate from the location of said local entity independently of the user's position and head orientation relative to the entity.

10. (currently amended) A system according to claim 9, wherein said multiple sound output devices are headphones worn by the user, the controller being arranged to control excitation~~location of the voice service sound output in the audio field generated by~~of the headphones being controlled to take account of in dependence on the relative positions of the user and entity and rotations of the user's head.

11. (currently amended) A system according to claim 9, wherein said multiple sound output devices are loudspeakers associated with the locality of the entity rather than with the user and connected with the voice service through a communications infrastructure-, the controller being arranged to control the

~~sound output from~~excitation of the loudspeakers ~~being controlled~~
in dependence on the relative positions of the user and entity.

12. (original) A system according to claim 1, wherein the voice service arrangement comprises:

- a voice page server for serving voice pages in the form of text with embedded voice markup tags; and
- a voice browser comprising:
 - a speech recognizer for carrying out speech recognition of user voice input received as voice signals;
 - a dialog manager for effecting dialog control on the basis of output from the speech recognizer and pages served by the voice page server; and
 - a text-to-speech converter operative to convert voice pages into voice output signals under the control of the dialog manager.

13. (currently amended) A system according to claim 6, wherein the user equipment includes a mobile phone providing the said wireless communication subsystem and said audio input and output arrangements~~means~~.

14. (currently amended) A system according to claim 6, wherein the voice service arrangement comprises:

- a voice page server for serving voice pages in the form of text with embedded voice markup tags; and
- a voice browser comprising:
 - a speech recognizer for carrying out speech recognition of user voice input received as voice signals;

- a dialog manager for effecting dialog control on the basis of output from the speech recognizer and pages served by the voice page server; and

- a text-to-speech converter operative to convert voice pages into voice output signals under the control of the dialog manager;

the user equipment including a mobile phone providing the said wireless communication subsystem and said audio input and output arrangements~~means~~, the wireless network being a mobile phone wireless network.

15. (original) A system according to claim 14, wherein the voice browser is not part of the user's equipment and the contact data comprises a telephone number usable by the mobile phone to connect over a voice circuit of the wireless network to the voice browser, the voice browser being responsive to being connected to by the mobile phone to access the voice page server and to thereafter use said voice circuit for the exchange of voice input and/or output between the user and voice browser.

16. (original) A system according to claim 14, wherein the voice browser is not part of the user's equipment and the contact data is in the form of a URL, the mobile phone being operable to pass this URL, via a data-capable bearer service of the wireless network, to the voice service arrangement; the voice service arrangement being operative to thereupon use its voice browser to call back the user on the mobile phone using a voice circuit of the wireless network that is then used for voice input and/or output between the user and voice browser.

17. (original) A system according to claim 14, wherein the voice browser is not part of the user's equipment and the contact data is in the form of a URL, the mobile phone being operable to pass this URL, via a data-capable bearer service of the wireless network, to the voice service arrangement; the voice service arrangement being thereafter operative to use the data-capable bearer service for voice input and/or output between the user and voice browser using a packetized voice protocol.

18. (original) A system according to claim 14, wherein the voice browser is part of the user's equipment and the contact data is in the form of a URL, the voice browser being operative to use this URL to access, via a data-capable bearer service of the mobile-phone wireless network, the voice page server; the voice service arrangement being thereafter operative to use the data-capable bearer service for passing text based input and/or output between the voice browser and voice page server.

19. (original) A system according to claim 1, wherein the wireless network is a proprietary-space local network hosting the voice service arrangement, the local entity being located in the proprietary-space concerned.

20. (original) A system according to claim 6, wherein the wireless network is a proprietary-space local network hosting the voice service arrangement, the local entity being located in the proprietary-space concerned.

21. (currently amended) A system according to claim 20, wherein said audio output ~~means~~arrangement comprises headphones worn by

the user and a controller for controlling excitation of the headphones, ~~the location of the voice service sound output in the audio field generated by the headphones being controlled to take account of~~ in dependence on the relative positions of the user and entity and rotations of the user's head such that the sound output appears to be originating from said local entity the user to emanate from the location of said local entity independently of the user's position and head orientation relative to the entity.

22. - 24. (canceled)

25. (original) A system according to claim 2, wherein the beacon device is operative to include parameter values relating to the state of said local entity in said contact data, the user equipment being operative to pass these parameter values via the wireless network to the voice service arrangement for use in conditioning the output of the voice service.

26. (canceled)

27. (currently amended) A system according to claim ~~26~~1, wherein said audio output arrangement comprises headphones forming part of the user equipment, said controllable functionality comprising a mouth representation device associated with the local entity and arranged to present a mouth representation that is movable ~~the local entity has an associated mouth-like feature movable by said functionality in dependence on the control data from the voice service whereby to cause operation of the mouth-like feature~~ operate in synchronism with voice output from the voice service.

28. (currently amended) A system according to claim 27, wherein the mouth representation device ~~mouth-like feature~~ is electro-mechanical in form with ~~moving~~ movable mouth parts, said controllable functionality further comprising ~~controlled by~~ electrically-powered actuators for moving said mouth parts.

29. (currently amended) A system according to claim 27, wherein the mouth representation device comprises an electronic display for displaying a mouth image. ~~mouth-like feature is electronically displayed feature displayed on a display screen.~~

30. (currently amended) A system according to claim 1, further comprising an arrangement for determining the orientation of the local entity as perceived from the user's current location, ~~means for sensing the position of the user relative to the entity, and means for passing corresponding position data to the voice service,~~ the voice service being operative to condition its output in dependence on the determined orientation of the local entity ~~user's sensed position~~.

31. (currently amended) A system according to claim 1, further comprising an arrangement for determining ~~means for sensing the orientation of the user relative to the entity, and means for passing corresponding orientation data to the voice service,~~ the voice service being operative to condition its output in dependence on the user's determined ~~sensed~~ orientation.

32. (currently amended) A system according to claim 1, further comprising an arrangement for determining ~~means for sensing the line of approach~~ or departure of the user relative to the

~~entity, and means for passing corresponding line-of-approach data to the voice service,~~ the voice service being operative to condition its output in dependence on the user's line of approach or departure.

33. (currently amended) A system according to claim 2, wherein multiple beacon devices are associated with the entity with each beacon device being arranged to communicate different contact data, the voice service arrangement being arranged to adapt the voice output of the voice service delivered in respect of said local entity in dependence on the contact data of the beacon device first or most recently picked up by the user equipment ~~determining the voice service to be provided to the user in respect of that entity.~~

34. (currently amended) A method of interacting with~~voice communication concerning~~ a local entity wherein:

(a) upon a user approaching the local entity, contact data, identifying a voice service associated with the entity but separately hosted, is presented to the user or to user-carried ~~equipment-carried by the user;~~

(b) the contact data is used by the user's equipment to contact the voice service over a wireless network;

(c) the user interacts with the voice service through spoken dialog with both voice input by the user and voice output by the service; ~~the voice service acting as voice proxy for the local entity.~~

(d) the voice service controls the operation of functionality associated with the local entity by means of control data passed to the functionality over a short-range wireless link from the

user-carried equipment whereby to coordinate operation of the functionality with said voice output.

35. (currently amended) A method according to claim 34, wherein the contact data is presented to the user 's equipment by means of a beacon device located at or near the local entity and communicating with the user's equipment over ~~a~~said short-range ~~communication-wireless~~ link.

36. (original) A method according to claim 34, wherein the contact data is presented to the user's equipment by the scanning into the equipment of markings that are located on or adjacent the entity and represent the contact data.

37. (original) A method according to claim 34, wherein the contact data is visually or audibly presented to the user with the latter then inputting the contact data in their equipment.

38. (original) A method according to claim 34, wherein both said voice input and voice output are carried across the wireless network between the voice service and sound input and output devices forming part of the user's equipment.

39. (original) A method according to claim 34, wherein both said voice input and voice output are exchanged with the user by local sound input and output devices that are associated with the locality of the entity rather than with the user and are connected with the voice service through a communications infrastructure.

40. (original) A method according to claim 34, wherein said voice input is carried across the wireless network to the voice service from a sound input device forming part of the user's equipment, and said voice output is effected through at least one local sound output device that is associated with the locality of the entity rather than with the user and is connected with the voice service through a communications infrastructure.

41. (currently amended) A method according to claim 34, wherein sound output is through multiple sound output devices spaced from said local entity and controlled so that the sound appears to the user to emanate from the location of said local entity independently of the user's position and head orientation relative to the entity~~be originating from said local entity.~~

42. (currently amended) A method according to claim 41, wherein said multiple sound output devices are headphones worn by the user, ~~the location of the voice service sound output in the audio field generated by~~excitation of the headphones being controlled to take account of the relative positions of the user and entity and rotations of the user's head.

43. (currently amended) A method according to claim 41, wherein said multiple sound output devices are loudspeakers associated with the locality of the entity rather than with the user and connected with the voice service through the communications infrastructure, ~~the sound output from~~excitation of the loudspeakers being controlled in dependence on the relative positions of the user and entity.

44. (original) A method according to claim 34, wherein the voice service is effected by the serving of voice pages in the form of text with embedded voice markup tags to a voice browser, the voice browser interpreting these pages and carrying out speech recognition of user voice input, text to speech conversion to generate voice output, and dialog management; the voice browser being disposed between a voice page server and the user.

45. (currently amended) A method according to claim 34, wherein the user equipment includes a mobile phone, ~~step~~-(b) involving contacting the voice service using the mobile phone and ~~step~~-(c) involving the mobile phone to transfer voice service input and output to and from the user.

46. (currently amended) A method according to claim 34, wherein:

- the voice service is effected by the serving of voice pages in the form of text with embedded voice markup tags to a voice browser, the voice browser interpreting these pages and carrying out speech recognition of user voice input, text to speech conversion to generate voice output, and dialog management; the voice browser being disposed between a voice page server and the user; and

- the user equipment includes a mobile phone, ~~step~~-(b) involving contacting the voice service using the mobile phone and ~~step~~-(c) involving the mobile phone to transfer voice service input and output to and from the user.

47. (original) A method according to claim 46, wherein the voice browser is not part of the user's equipment and the

contact data comprises a telephone number which when dialled by the mobile phone connects over a voice circuit to the voice browser and causes the latter to access the voice page server, the voice circuit being subsequently used for the exchange of voice input and/or output between the user and voice browser.

48. (currently amended) A method according to claim 46, wherein the voice browser is not part of the user's equipment and the contact data is in the form of a URL which in ~~step~~—(b) the mobile phone passes, via a data-capable bearer service of the mobile-phone wireless network, to the voice service; the voice service then using the voice browser to call back the user on the mobile phone using a voice circuit that is then used in ~~step~~ (c) for voice input and/or output between the user and voice browser.

49. (currently amended) A method according to claim 46, wherein the voice browser is not part of the user's equipment and the contact data is in the form of a URL which in ~~step~~—(b) the mobile phone passes, via a data-capable bearer service of the mobile-phone wireless network, to the voice service; the data-capable bearer service being subsequently used in ~~step~~—(c) for voice input and/or output between the user and voice browser using a packetized voice protocol.

50. (currently amended) A method according to claim 46, wherein the voice browser is part of the user's equipment and the contact data is in the form of a URL which in ~~step~~—(b) the voice browser uses to access, via a data-capable bearer service of the mobile-phone wireless network, the voice page server; the data-capable bearer service being subsequently used in ~~step~~—(c) for

passing text based input and/or output between the voice browser and voice page server.

51. (original) A method according to claim 34, wherein the wireless network is a proprietary-space local network hosting the voice service, the local entity being located in the proprietary-space concerned.

52. (currently amended) A method according to claim 51, wherein the user equipment includes a wireless headset which in ~~step~~-(c) is used for exchanging voice input and output with the voice service over the same wireless network as used in ~~step~~-(b).

53. (currently amended) A method according to claim 34, wherein the carrying out of ~~step~~-(b) is subject to user approval at the time.

54. (original) A method according to claim 34, wherein the user equipment ensures that the user is only connected to one voice service at a time regardless of how many local entities with beacon devices are within pickup range.

55. (currently amended) A method according to claim 34, wherein in ~~step~~-(b) the identity of the user is sent to the voice service and used by the latter to look up user profile data which is then used to customise the voice service to the user.

56. - 58. (canceled)

59. (currently amended) A method according to claim 35, wherein the beacon device includes parameter values relating to

the state of said local entity in said contact data, these parameter values being passed in ~~step~~ (b) over the wireless network to the voice service where they are used in conditioning the output of the voice service.

60. (canceled)

61. (currently amended) A method according to claim ~~34~~60, wherein the voice output of the voice service is output via headphones of the user equipment, said controllable functionality comprising a mouth representation device associated with the local entity and arranged to present a mouth representation that is movable in dependence on ~~the local entity has an associated mouth-like feature movable by said functionality, the control data from the voice service being used~~whereby to cause operation of the mouth-like feature~~operate~~ in synchronism with voice output from the voice service.

62. (currently amended) A method according to claim 61, wherein the mouth representation device ~~mouth-like feature~~ is incorporated into the beacon device.

63. (currently amended) A method according to claim 61, wherein the mouth representation device ~~mouth-like feature~~ is electro-mechanical in form with movable~~ing~~ mouth parts ~~controlled~~ operated by electrically-powered actuators in dependence on said control data.

64. (currently amended) A method according to claim 61, wherein the mouth representation device comprises an electronic display

for displaying a mouth image.~~mouth-like feature is electronically displayed feature.~~

65. (currently amended) A method according to claim 34, wherein the voice output provided from the service in (c) ~~provided to a user~~ is dependent on the orientation of the local entity as perceived from the user's current location~~user's position relative to the entity.~~

66. (currently amended) A method according to claim 34, wherein the voice output provided from the service in (c) ~~provided to a user~~ is dependent on the user's orientation relative to the entity.

67. (currently amended) A method according to claim 34, wherein the voice output provided from the service in (c) ~~provided to a user~~ is dependent on the user's line of approach or departure relative to the entity.

68. (currently amended) A method according to claim 35, wherein multiple ~~receiving~~ beacon devices are associated with the entity each arranged to communicate different contact data, the voice service adapting its voice output in respect of said local entity in dependence on the contact data of the beacon~~receiving device first or most-recently picked up by the user-equipment~~~~related contact data~~~~service being provided to the user in respect of that entity.~~

69. (new) A method of voice communication concerning a local entity wherein:

upon a user approaching the local entity, a voice service associated with the entity but separately hosted, is activated and presents voice output to the user; and

the voice service coordinates operation of functionality located at the local entity with said voice output by means of control data passed from the voice service to said functionality via user-carried equipment and a short-range wireless link between the equipment and said functionality.

70. (new) A method of voice communication concerning a local entity wherein:

upon a user approaching the local entity, a beacon device located at the local entity passes entity-related data over a short-range wireless link to user-carried equipment, the entity-related data comprising voice-service contact data identifying a voice service associated with the local entity but separately hosted, and parameter data indicative of a current state of the local entity;

the voice-service contact data is used by the user-carried equipment to contact the voice service and pass it said parameter data; and

the voice service presents voice output to the service, the parameter data being used by the voice service in determining its voice output.